Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	MM Docket No. 87-268
and Their Impact upon the Existing	)	
Television Broadcast Spectrum	)	

To: The Commission

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COMMENTS OF ASSOCIATION OF PUBLIC-SAFETY COMMUNICATIONS OFFICIALS-INTERNATIONAL, INC. (APCO) IN RESPONSE TO SIXTH FURTHER NOTICE OF PROPOSED RULEMAKING

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SIXTH FURTHER NOTICE OF PROPOSED RULEMAKING

The Association of Public-Safety Communications Officials-International, Inc. ("APCO") hereby submits the following comments in response to the Commission's Sixth Further Notice of Proposed Rulemaking in the above-captioned proceeding.

APCO is the nation's oldest and largest public safety communications organization, with over 12,000 members involved in the management and operation of law enforcement, fire, emergency medical, and other vital public safety communications systems. APCO is the FCC's certified frequency coordinator for the Part 90 Police Radio Service, Local Government Radio Service, and for all 800 MHz public safety channels. APCO appears frequently before the Commission and other government bodies on a wide range of communications matters of particular concern to state and local government public safety agencies.

INTRODUCTION AND SUMMARY

The Commission has proposed a channel plan for digital television ("DTV") which contemplates the reallocation to other services, including public safety, of the spectrum now reserved for UHF television channels 60-69. APCO strongly supports that aspect of the Commission's proposal. As recently documented by the Public Safety Wireless Advisory Committee ("PSWAC"), federal, state, and local public safety agencies are in desperate need of additional radio spectrum. The spectrum now allotted for television channels 60-69 is a prime candidate for meeting a portion of those public safety needs. This portion of the UHF-TV band is lightly used at present, and is immediately adjacent to the 800 MHz frequency bands already allocated for public safety operations.

APCO recognizes that the primary subject of this proceeding is the development of a DTV channel plan which will allow for the reallocation of current television spectrum, rather than to what service that spectrum should be reallocated. Nevertheless, the Commission has an obligation in all of its spectrum allocation proceedings to consider the impact of its decisions on the safety of life and property, 47 U.S.C. §151, and Congress has repeatedly reaffirmed that

> "radio services which are necessary for the safety of life and property deserve more consideration in allocating spectrum than those services which are more in the nature of convenience or luxury." S.Rep. No. 191, 97th Cong., 2d Sess. 14 (1981), reprinted in [1982] U.S. Code Cong. & Ad.News 2237, 2250.[1]

[1] National Association of Broadcasters v. FCC, 740 F.2d 1190, 1213 (DC Cir. 1984).

Therefore, the Commission's action in this and related proceedings must take into account the public benefit of creating an opportunity to provide new radio spectrum for police, fire, emergency medical and other public safety agencies, and not just the potential impact on television broadcasters.

As a result of the extensive work of PSWAC, the Commission now has before it the most comprehensive study of public safety spectrum requirements ever conducted to date. Among the findings of PSWAC is that essential public safety spectrum needs require the allocation of an additional 25 MHz within the next five years. This requires the Commission to examine the existing allocation structure, such as the television spectrum at issue in this proceeding, to determine what can be done to free up usable spectrum as soon as possible for reallocation to public safety. The Commission cannot hide behind the claim that this is a broadcast proceeding in which public safety needs may not be considered. This is a spectrum proceeding, and it has serious ramifications on the ability of government agencies to protect the safety of life and property.

While channel 60-69 spectrum would be extremely valuable for public safety agencies, there is also a substantial need for new public safety spectrum in the VHF band above 174 MHz (adjacent to current 150-174 MHz land mobile bands) and in the lower UHF band at 470-512 MHz (where land mobile sharing already exists in eleven major metropolitan areas). Such additional spectrum is necessary to provide for enhanced interoperability, especially for area wide operations for state police and similar agencies. Therefore, APCO suggests that the Commission also modify the DTV core channels to allow for the eventual reallocation of spectrum in the range of current VHF channels 7-8

(174-186 MHz) and for expanded public safety land mobile operations in UHF channels 14-20 (470-512 MHz).

Finally, adjustments are necessary in the DTV table of allotment to protect existing public safety operations in eleven major metropolitan areas on UHF Channels 14-20. In particular, channel allotments need to be changed for New York, San Francisco, and Los Angeles. Current public safety use of channels 14-20 in these and other areas must not be disrupted.

I. PUBLIC SAFETY AGENCIES FACE SEVERE SPECTRUM SHORTAGES WHICH CAN BE ALLEVIATED, IN PART, BY THE REALLOCATION OF SPECTRUM AT UHF CHANNELS 60-69.

APCO and others in the public safety community have long urged the FCC to allocate additional spectrum to meet the expanding communications requirements of police, fire, emergency medical, and other public safety agencies. Recognizing this need, under the co-sponsorship of the FCC and NTIA, the Public Safety Wireless Advisory Committee has just completed the most comprehensive evaluation of public safety spectrum needs ever conducted. The PSWAC was led by a blue ribbon Steering Committee that included the Director of the FBI, the Undersecretary of Treasury, the New York City Police Commissioner, the Los Angeles County Fire Chief, and other leaders from the public safety and equipment manufacturing community. In September 1996, PSWAC issued its Final Report along with over 700 pages of additional reports and related documents prepared by the five PSWAC subcommittees. This culminated

over a year of extensive research and analysis, including multi-day meetings at locations throughout the country.[2]

As the principal conclusion of the Final Report, PSWAC has stressed that "**unless immediate measures are taken to alleviate spectrum shortfalls and promote interoperability, Public Safety agencies will not be able to adequately discharge their obligation to protect life and property in a safe, efficient and cost effective manner.**" PSWAC Final Rpt at 2 (emphasis in original). As described by PSWAC, the "currently allocated Public Safety spectrum is insufficient to meet current voice and data needs, will not permit deployment of needed advanced data and video systems, does not provide adequate interoperability channels, and will not meet future needs under projected population growth and demographic changes." PSWAC Final Rpt at 19-20.[3]

Especially in and near large metropolitan areas where public safety agencies are unable to obtain satisfactory channels for current and future communications operations, PSWAC has found that a critical short-term need exists requiring immediate action. New spectrum is also needed to enhance the ability of different agencies to communicate (i.e., "interoperability") during both day-to-day emergency operations (e.g., accident scenes, multi-agency police activities) and major disasters. Time after time, major emergencies such as the Oklahoma City bombing demonstrate the serious problems resulting from the inability of emergency personnel to coordinate their activities over incompatible radio frequencies. And over the longer term, new spectrum for public safety will allow

[2] Additional materials supporting the PSWAC findings have been filed in response to the Commission's Notice of Proposed Rulemaking in WT Docket 96-86.

agencies to implement new communications technologies including new tools to fight crime, deliver emergency medical care, and respond to fires and other emergencies. Examples include broadband data transmissions of fingerprints, mugshots, criminal histories, building diagrams, hazardous material information, medical images and related emergency response data.

PSWAC studied these spectrum requirements, considered the impact of spectrum efficient technology on current public safety allocations, and evaluated the potential role of commercial wireless services. In its final analysis, PSWAC concluded that the FCC must make the following allocations:

- 2.5 MHz below 512 MHz immediately to meet interoperability needs.
- approximately 25 MHz within the next five years
- an additional 70 MHz within the next 15 years.

Of particular relevance to this proceeding, PSWAC found that the requirement of 25 MHz within five years "can be addressed by making part of the spectrum presently used for television broadcast channels 60-69 available as soon as possible." PSWAC Final Rpt. at 3.

The UHF spectrum now reserved for television channels 60-69 is particularly well-suited for many of the public safety spectrum needs identified by PSWAC. First, much of the spectrum can be made available in the immediate future. As the Commission notes, there are only 97 full power television stations now licensed to

[3] APCO incorporates by reference all of the PSWAC Reports (Vols. I and II) and requests that the Commission place those reports in the record of this proceeding.

operate on channels 60-69, leaving a significant amount of unoccupied spectrum that could be reallocated immediately.

Second, the frequencies occupied by channels 60-69 (746-806 MHz) are adjacent to the 800 MHz land mobile radio bands that are already heavily used by a large number of public safety agencies throughout the country. Seventy of the land mobile channels in the 806-821/851-866 MHz band and all of the land mobile channels in the 821-824/866-869 MHz band are reserved exclusively for public safety.[4] These bands (which occupy spectrum previously allocated for television channels 70-83) generally contain the newest and most spectrum efficient public safety radio systems, many of which are wide area trunked systems, often shared by multiple public safety agencies. The proximity of these existing public safety operations to the channels 60-69 spectrum would greatly enhance interoperability between current and future public safety radio systems operating in the 800 MHz bands.[5] This would avoid many of the problems created in the past when new public safety spectrum allocations were in completely different parts of the radio spectrum from then-existing allocations, thus preventing effective interoperability between new and old systems.

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[4] 47 C.F.R. §§90.16 and 90.617. Many public safety agencies also hold licenses in the 800 MHz General Category frequencies, which are also in the 806-821/851-866 MHz band.

[5] However, as noted below in Section V, new allocations in channels 60-69 will not provide interoperability for public safety systems in bands below 512 MHz. Additional allocations in VHF and lower UHF bands are needed for that purpose.

II. THE REALLOCATION OF BROADCAST SPECTRUM FOR PUBLIC SAFETY USE HAS BEEN A FUNDAMENTAL GOAL OF THIS PROCEEDING.

The reallocation of a significant portion of television spectrum for public safety is consistent with the original intent and long history of this and related FCC proceedings to reclaim unused broadcast spectrum for more spectrum efficient operations. In 1970, the Commission recognized that the UHF television band was not being used efficiently and, in Docket 18261, reallocated 12 MHz of lower UHF spectrum (2 UHF channels per metropolitan area) between TV channels 14-20 for use by land mobile communications systems in the ten largest metropolitan areas.[6] The Commission concluded that sharing of the channels by broadcasters would "substantially increase the utilization of those frequencies," while providing much-needed spectrum relief to land mobile users.[7] At the same time, in companion Docket 18262, the Commission also shifted TV translator stations from UHF channels 70-83 in the ten largest U.S. cities to below channel 69 channels, so that the frequencies could be reallocated for exclusive nationwide use by land mobile systems.[8]

In 1985, the Commission initiated a major proceeding to explore further land mobile use of the UHF band in eight large urban areas that faced significant frequency

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[6] See Reallocation of UHF-TV Channels 14 through 20 to the Land Mobile Radio Services, First Report and Order, 23 FCC2d 325 (1970). The Commission later extended the number of cities where the spectrum would be available to the thirteen largest. See Further Sharing of the UHF Television Band by Private Land Mobile Services, Notice of Proposed Rulemaking, 101 FCC2d 852, 855-56 (1985).

[7] 23 FCC 2d at 338.

[8] See Future Use of the 806-960 MHz Band, First Report and Order and Second Notice of Inquiry, 19 RR2d 1663, 1666-1667 (1970).

congestion.[9] The Commission once again referred to its public interest obligation to encourage the most efficient usage of the spectrum, and to provide additional frequencies to support the growing requirements of private land mobile radio services, especially "essential public services such as police and fire protection, medical assistance" and "other services needed by the public."[10] However, further land mobile sharing in the UHF band has been held in abeyance since 1987, when the Commission commenced this proceeding to develop a plan for high definition television ("HDTV"), later advanced television ("ATV"), and now digital television ("DTV"). [11] While the television acronyms have changed, the problems which led the Commission to consider reclaiming broadcast spectrum have become more serious. In particular, the shortage of public safety land mobile radio spectrum has become far worse, as documented in the PSWAC reports discussed above.

While the Commission has deferred further land mobile sharing of the television band pending the completion of this proceeding, it has never loss sight of the need to reallocate a portion of the television spectrum to other services. The Commission has made efficient usage of the radio spectrum one of its principal public interest goals in the assignment of spectrum for, and the transition to, the new era of digital television.[12] In

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[9] Further Sharing of the UHF Television Band by Private Land Mobile Services, Notice of Proposed Rulemaking, 101 FCC2d 852 (1985).

[10] Id. at 855.

[11] See Further Sharing of the UHF Television Band by Private Land Mobile Radio Services, Order, 2 FCC Rcd 6441 (1987).

[12] See Advanced Television Systems, Notice of Inquiry, 2 FCC Rcd 5125, 5131 (1987).

the Tentative Decision and Notice of Inquiry, the Commission particularly noted that, "our preference is for ATV systems that can provide satisfactory service using the least spectrum."[13] Inherent in this goal is the fact that the allocation of television broadcast spectrum for DTV service by existing television broadcasters is in the public interest because, among other relevant factors, it will permit the reallocation of existing television spectrum for new uses by entities with the greatest public need.[14]

As the Commission has tentatively found in the Sixth Further Notice, excluding channels 60-69 from the DTV core spectrum will have no significant impact on broadcasters or viewers. Any DTV channel plan will involve at least some minor reduction in current station coverage, in terms of both geography and population served. However, the Commission determined that the additional impact of avoiding use of channels 60-69 for DTV allotments would have a de minimis impact. According to the Commission's analysis, a DTV plan that makes full use of channels 60-69 would reduce the cumulative population served by 5.4% (as compared to current NTSC coverage), whereas a plan that avoids use of channels 60-69 for DTV reduces the cumulative population served by 6.1%. Therefore, there is just a 0.7% difference between the two approaches. Moreover, these calculations do not take into account terrain shielding, which reduces the overall impact even further. See Sixth Further Notice at ¶32. In any

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[13] See Advanced Television Systems, Tentative Decision and Notice of Inquiry, 3 FCC Rcd 6520, 6531 (1988).

[14] Id.; See also Advanced Television Systems, Second Report and Order/Further Notice of Proposed Rulemaking, 7 FCC Rcd 3340, 3354 (1992); Advanced Television Systems, Fourth Further Notice of Proposed Rulemaking and Third Notice of Inquiry, 10 FCC Rcd 10540, 10549 (1995).

event, even in the relatively few additional areas where there is theoretical signal loss, the only perceivable impact for viewers would be a slight degradation in picture quality. Id. Furthermore, such impact, if it occurs at all, will be at the fringe of a current NTSC station's coverage, where there is likely to be very high cable penetration. Since most of the viewers who might otherwise experience a reduction in picture quality are cable subscribers, they are unlikely to ever notice the difference.

III. USE OF CHANNELS 60-69 FOR TELEVISION SERVICE DURING THE TRANSITION PERIOD SHOULD BE STRUCTURED TO MAKE AVAILABLE AT LEAST 24 MHz OF SPECTRUM FOR PUBLIC SAFETY USE WITHIN 5 YEARS.

The Commission needs to take steps to maximize the immediate availability of spectrum in channels 60-69 for public safety use in major metropolitan areas. Just as the Commission has set goals with respect to the development of the DTV allotment plan, it should now set goals with respect to amount and time period in which reclaimed television spectrum will be made available for public safety use. In this way, an overall plan can be developed meeting both goals. From the public safety standpoint, the goal at the minimum must be to make available at least 24 MHz of spectrum for public safety use within five years.

To this end, several factors must be addressed by the Commission in the final design of the plan. In particular, the Commission must reduce and, if possible, eliminate proposed channel 60-69 interim DTV allotments. The current proposed table of allotments includes 30 DTV allotments in channels 60-69, some of which are in or near

major metropolitan areas, which have the greatest need for public safety spectrum.[15] While the DTV allotments of channels 60-69 are intended as interim, such allotments would obviously limit the amount of spectrum available for immediate reallocation, especially if there are also NTSC channels of channels 60-69 in the same metropolitan area.[16]

To the extent that it is necessary to place any DTV allotments on channels 60-69, the Commission should adopt strict deadlines by which stations must either initiate DTV operations or relinquish the channel to the Commission for reallocation. The Commission should also attempt to concentrate the DTV allotments on a particular channel or channels, rather than having the allotments scattered across all ten channels. Such concentration would maximize the extent to which certain channels are left vacant in major metropolitan areas, and thus allow the reallocation of common frequencies to public safety across the country. Nationwide reallocation of common frequencies for public safety would facilitate interoperability between agencies and promote the development of advanced and competitively priced public safety radio equipment.[17]

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[15] For example, the Los Angeles area could be impacted by three channel 60-69 DTV channels (in Los Angeles, Ontario, and Santa Ana), the San Francisco area would be impacted by three (two in Stockton and one in San Francisco), the New York area by as many as four (two in Hartford, CT, and one each in Newton, NJ and Kingston, NY), the Chicago area by two (both in Chicago), and the Baltimore-Washington area by two (one in each).

[16] Among other factors to examine, the Commission may wish to explore the use of terrain shielding in its analysis to identify alternative DTV allotments.

[17] While common channels nationwide are preferred, the current land mobile use of channels 14-20 provides ample evidence of the feasibility of the sharing different frequencies in different metropolitan areas (so long as the frequencies are in the same general range, e.g. UHF channels 14-20, or 60-69).

Aside from 97 full power stations, and the potential interim allotment of 30 DTV channels, there are also a large number of low power television ("LPTV") stations currently licensed to operate in channels 60-69. However, those LPTV stations were granted licenses on a secondary basis, and have always been on notice that their operations could be temporary. While APCO understands the situation of LPTV stations, the radio spectrum is a finite resource subject to government allocation in the public interest. The fact that the FCC previously opened the UHF band for secondary LPTV does not give LPTV stations "squatters rights" which stand in the way of other uses of the spectrum, especially the use of spectrum for the protection of life and property.

From a public safety perspective, it is particularly important that LPTV channels operating on channels 60-69 in metropolitan areas cease operations or relocate to other channels. Metropolitan areas are where public safety agencies have the greatest need for additional spectrum. In contrast, there are already a plethora of television stations and other media outlets in every major metropolitan area, thereby minimizing the impact on viewers in those metropolitan areas should one or two existing LPTV stations be forced to cease operations or relocate to other channels.

The Commission seeks comments in the Sixth Further Notice as to whether new users of the channel 60-69 frequencies should be required to compensate LPTV licensees for their displacement from channels 60-69. APCO strongly opposes that concept, at least insofar as it would apply to new users of the band that are state and local government public safety agencies. Public agencies have limited resources which will be needed to implement the new public safety communications systems on those frequency

bands, rather than to compensate commercial entrepreneurs, licensed from the start only on a secondary basis. Furthermore, neither federal law nor Commission policy have ever required that state and local government public safety agencies pay for spectrum designated for their use.[18]

To the extent that any portion of the channel 60-69 spectrum may be allocated for new services other than public safety (e.g., commercial and other entrepreneurial entities), then perhaps the Commission should consider allocating to public safety those channels from 60-69 which have the fewest LPTV (and full power) stations, and allocating the remainder of the channels to commercial services, who will be generating revenue from their use of the spectrum, and will be in a better position to compensate displaced LPTV licensees.

Furthermore, many of the channels from 60-69 are vacant, without any full power or low power stations, built or unbuilt. APCO agrees with the Commission that those allotments should be promptly eliminated to maximize the extent to which the channel 60-69 spectrum is immediately reallocated for public safety use.

Finally, while APCO has no objection to the private negotiation by television stations of changes in the DTV allotment table, as proposed by the Commission, such changes should not be permitted to prejudice or limit the amount of spectrum available for reallocation to public safety. That should be an explicit limitation on negotiated

[18] For example, government entities are exempt from FCC application and regulatory fees, 47 U.S.C. §§158(d)(1) and 159(h), and competitive bidding due to the non-commercial nature of their operations. 47 U.S.C.§309(j).

changes to the allotment table, and must be a factor in any Commission approval for such changes.

IV. THE PROPOSED DTV CORE SPECTRUM SHOULD BE ADJUSTED TO OPEN ADDITIONAL FREQUENCIES BELOW 512 MHz FOR PUBLIC SAFETY USE.

The proposed reallocation of a portion of the spectrum now allotted for channels 60-69 will be extremely beneficial for public safety agencies across the nation. However, there are certain critical public safety needs that would be not be addressed by this one reallocation. In particular, and of relevance to this proceeding, is the need for additional public safety spectrum below 512 MHz.

While 800 MHz frequencies have been an invaluable resource for developing new public safety radio systems, there are some applications for which 800 MHz frequencies (and the future channel 60-69 frequencies if reallocated) are too high in the spectrum. These include systems that cover heavily wooded areas and very large systems that must span hundreds of square miles of sometimes sparsely populated areas (e.g., a state-wide system in large states such as California). Operating such systems at 800 MHz would require installation of hundreds of additional transmitter sites, often in remote areas, to provide adequate signal coverage.[19]

Agencies for which the 800 MHz band is inappropriate have few options. Historically, many state wide agencies operated on VHF low band (below 70 MHz). While some operations remain on that band, they face serious "skip" and interference

[19] The cost of these additional sites would make installation of an 800 MHz system prohibitive in many circumstances. See Comments of Quantum Radionics Corp. filed in WT Docket 96-86 (Oct. 21, 1996).

problems. Moreover, equipment manufacturers have largely abandoned the VHF low band, leaving agencies with outmoded and increasingly unreliable equipment. Unfortunately, the only land mobile allocations in-between the VHF low band and the 800 MHz band are the heavily congested 150-170 MHz (VHF high band) and 450-512 MHz (UHF) bands. It is here that the Commission should provide additional relief for public safety.

APCO suggests that the Commission re-examine its DTV table of allotments and consider excluding VHF channel 7 from the DTV core plan. Channel 7 is at 174-180 MHz, in the same frequency range as the current 150-170 MHz land mobile bands used by public safety agencies. As another alternative, we suggest that the Commission explore whether and how current land mobile public safety use in the 470-512 MHz band (UHF channels 14-20) could be expanded. To offset the impact of making additional spectrum below 512 MHz available for public safety, the Commission could either use VHF channels 5-6 as part of the DTV core spectrum, or extend the DTV core spectrum one or two channels above channel 51. The Commission should also make use of terrain shielding, especially in mountainous areas such as the West Coast, to develop more precise DTV allotments, which will open up additional channels that can be reallocated (at least on a geographic basis).

Finally, the Commission should adopt strict time deadlines by which stations must either use or lose their DTV allotments. Some of the unused allotments could then be reallocated for to public safety (or substituted for other DTV allotments which, in turn, open up spectrum targeted for reallocation).

V. THE TABLE OF ALLOTMENTS MUST BE REVISED TO PROTECT EXISTING PUBLIC SAFETY USERS IN UHF CHANNELS 14-20.

In eleven major metropolitan areas, there is currently an extensive amount of public safety land mobile radio use in UHF Channels 14-20. These frequencies provide critical public safety radio operations for agencies such as the Los Angeles County Sheriff's Department and the New York City Police Department. Unfortunately, the Commission's proposed table of DTV channel allotments includes a number of DTV allotments which are "short-spaced" to current adjacent channel public safety land mobile operations in the UHF band. The most serious problems appear to be in San Francisco, Los Angeles and New York. APCO chapters and individual public safety agencies from those areas will be filing comments with further details regarding the impact of the Commission's proposed allotments. It appears that these allotments were made without any consideration of the actual location of current land mobile transmitters, which are permitted anywhere within a fifty mile radius of the geographic center of the relevant city. In several instances there is very little distance (and in some cases virtual co-location) between the current transmitter site of a television station with a proposed DTV allotment in channels 14-21 and an existing public safety land mobile base station. If an adjacent channel DTV station were built at or near that site, there would be serious interference both to and from radio systems that protect the safety of life and property. From the standpoint of both the television broadcaster and the public safety agency, this requires the Commission to adjust its table and allot other DTV channels in those instances.

The Commission also proposes to preserve the current allocation of UHF channel 20 for land mobile operations in the Philadelphia area. APCO is at a loss to understand how the Commission or anyone else could even consider another option. There are an estimated 9,600 units licensed to public safety agencies now operating on channel 20 in Philadelphia. These vital communications operations must not be disrupted.

CONCLUSION

For the reasons discussed above, the Commission should move swiftly to adopt a digital television channel plan which releases spectrum for reallocation to public safety.

Respectfully submitted,

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